



TO SEARCH OR NOT TO SEARCH: HARNESSING THE POWER OF STATE DATABASES FOR YELLOW BAT CONSERVATION RESEARCH IN TEXAS

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ABSTRACT

Texas houses the largest bat diversity in the nation. Some species roost in caves, buildings, and old mines, while others roost in trees. Among these, little is known about three species of tree dwellers -- the Northern (*Lasiurus intermedius*), Southern (*Lasiurus ega*), and Western (*Lasiurus xanthinus*) yellow bats. Although *L. ega* and *L. xanthinus* have been considered rare in Texas, the number of encounters has increased recently. In this study, we assessed the prevalence of the three species of yellow bats in Texas utilizing the Department of State Health Services (DSHS) database, which summarizes all bats submitted for rabies testing. We examined the database by year and county occurrences of each species. Approximately 552 of 685 yellow bats submitted from 2004-2014 come from Hidalgo Co., Nueces Co. and Cameron Co. Texas, with 99 identified as *L. ega*. Furthermore, records of *L. xanthinus* have increased after first being recorded in the state in 1996 in Brewster Co. In the past four years, 8 yellow bats have been submitted from El Paso Co. and other records are known from Val Verde Co. The increasing number of records (*L. ega* reached a high of 10 by 2013) indicates that although once intermittent, *L. ega* and *L. xanthinus* are encountered more frequently than before. Evaluating records of yellow bats in the DSHS database allowed us to identify counties in Texas that might be productive for roosting behavior studies of these rarely researched species. Preliminary field studies are underway in Cameron Co. to analyze roost preferences for two of these yellow bats (*L. ega* and *L. intermedius*).

RESULTS

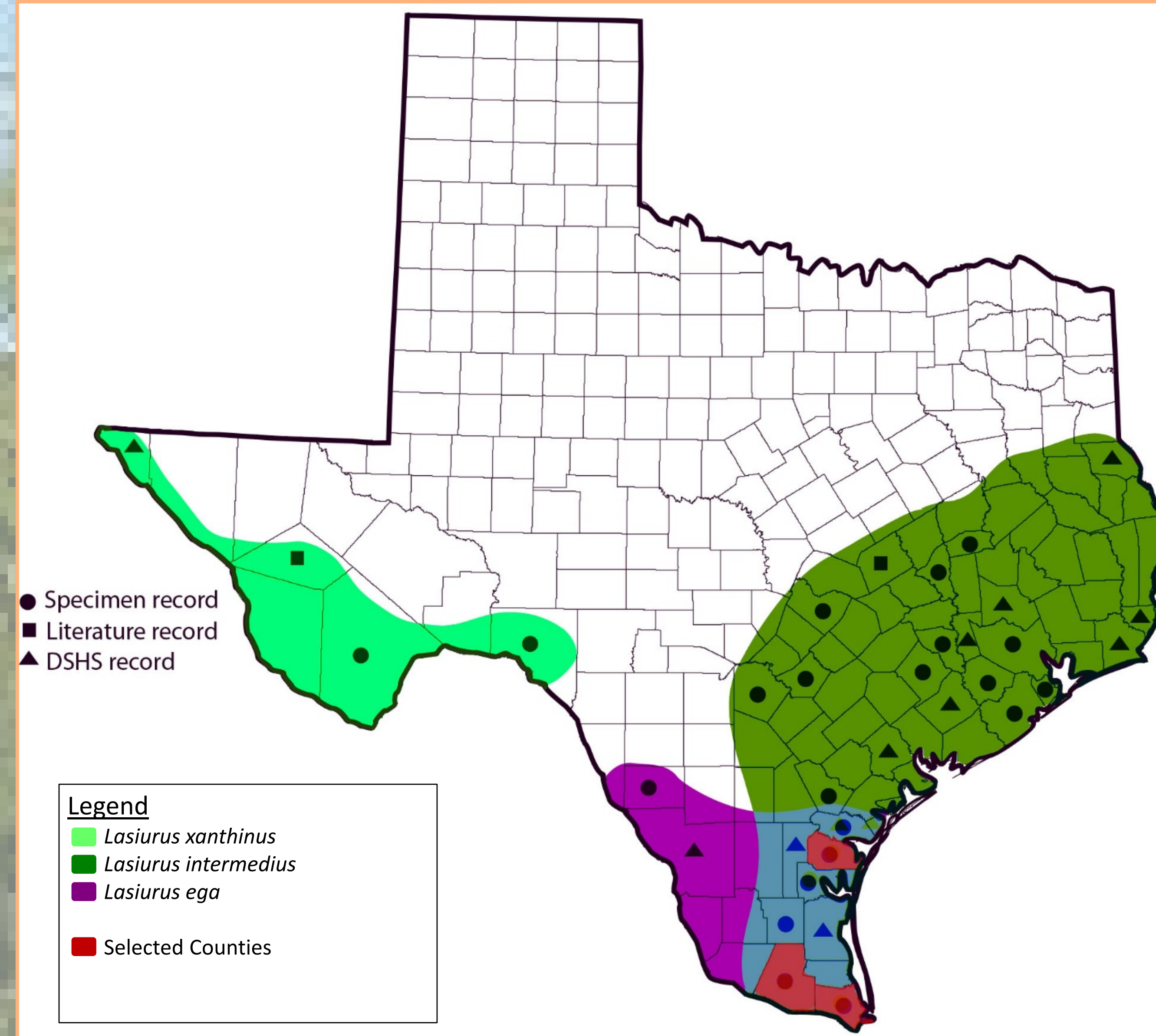


Figure 1. Texas Yellow Bat Species Distribution based on DSHS records, with counties with highest submissions highlighted

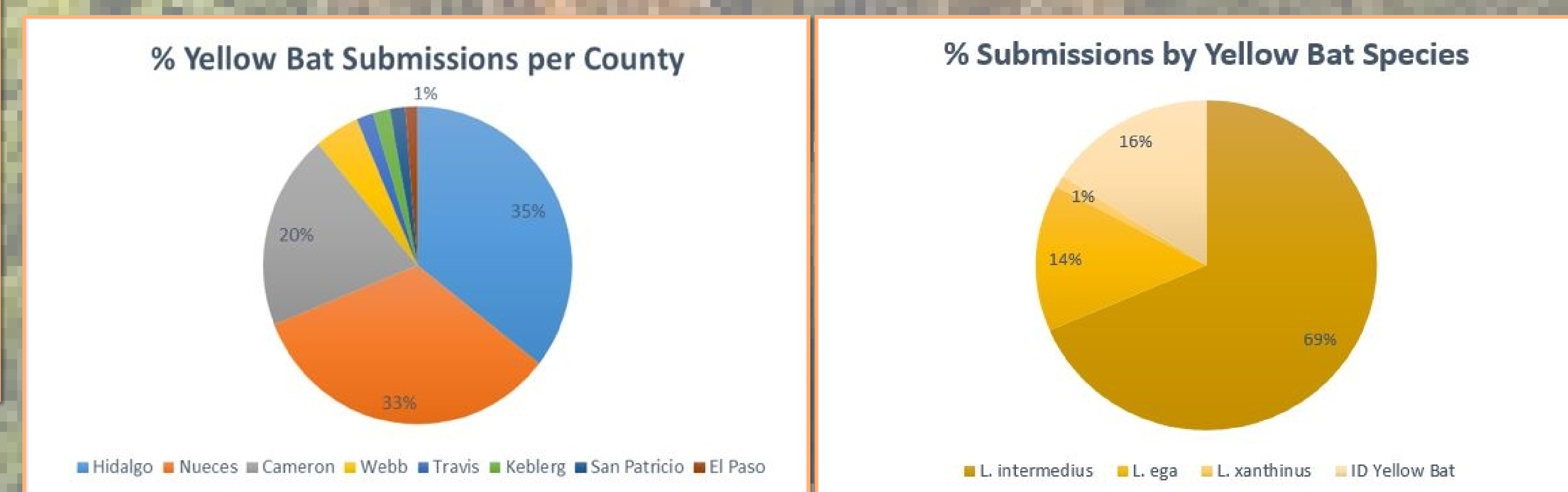
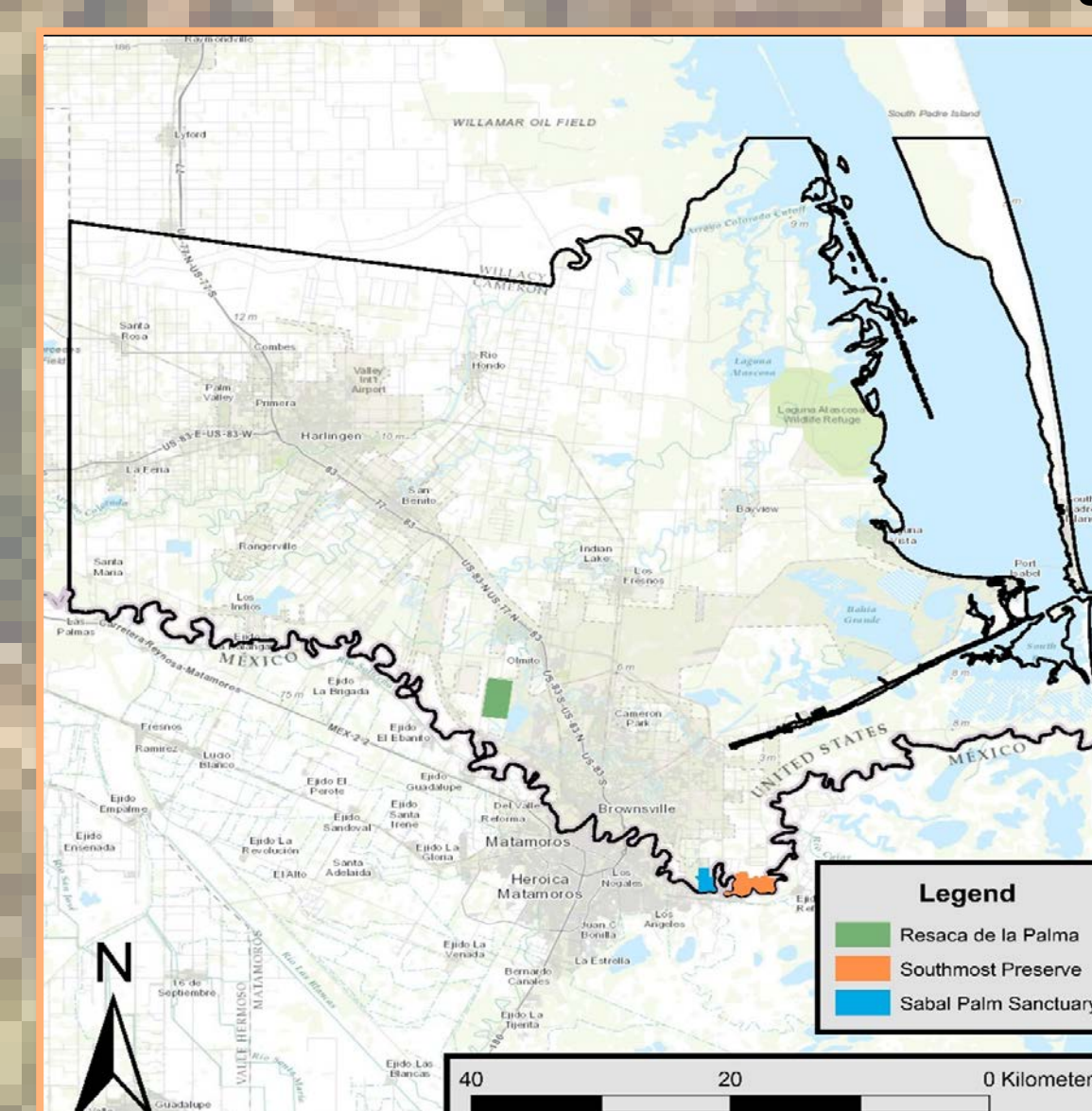


Figure 2. Submissions were totaled for each county; the percentages of those with highest submissions are shown (Hidalgo, Nueces and Cameron)

Figure 3. Submissions were totaled for each species; the percentages of those most frequented are shown: 1) *L. intermedius*, 2) *L. ega*, 3) *L. xanthinus*



DISCUSSION

- Most yellow bat submissions occurred in counties at the southernmost tip of Texas where the distribution of two yellow bat species merge
 - Hidalgo County
 - Nueces County
 - Cameron County
- Due to abundance of submissions, Cameron Co. was chosen to conduct preliminary studies on Southern and Northern yellow bats
- Current field studies:
 - Assured the presence of *L. ega* and *L. intermedius* in Cameron county study sites
 - Recorded voucher calls for both species
 - Radio-tagged bats to potential roosts

METHODS

- Access DSHS databases from 2005-2015 (B. Mayes, DSHS, unpublished data)
- Tally bat submissions by species and county
- Create map distribution of the three species of yellow bats in Texas

ACKNOWLEDGEMENTS

I am ever grateful to the following entities for encouraging the initiation and continuation of this project

- CITR – Graduate Research Fellowship
- Head of the River Ranch Scholarship

